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Environmental Assessment

Offner Bridge Replacement and Streambank Stabilization

Midewin National Tallgrass Prairie
Will County, Illinois

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INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- *Introduction:* The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Comparison of Alternatives, including the Proposed Action:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on issues raised by the public and other agencies. This discussion also includes possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.
- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project record located at the Supervisor's Office of the Midewin National Tallgrass Prairie (Midewin NTP).

Background

The Midewin NTP was established in 1996 as the first national tallgrass prairie in the United States under the Illinois Land Conservation Act (ILCA) of 1995. On March 10, 1997, the Department of Defense (Army) transferred the first 15, 080 acres of the former arsenal lands to the USDA Forest Service. The transfer included both land and infrastructure the Army used during the operation of the Joliet Army Ammunition Plant. Many of the facilities and buildings inherited from the Army are in poor condition and pose safety concerns for both the public and administrative use.

Figure 1: Erosion behind the wing wall of the bridge.

The existing Offner Bridge (Road 1 North) is a concrete bridge approximately 29 feet in length. The bridge has chipped concrete and exposed rebar on the underside of the deck, which has reduced the load rating for the bridge to 3 tons. Additionally, scour[1] at the upstream side of the west abutment has eroded behind the existing wing wall, threatening the integrity of the gravel roadbed. This segment of Offner Road (Road 1 North) is identified as a long-term administrative road in the Midewin Prairie Plan (see figure 6 in the Prairie Plan) and is necessary to maintain motor vehicle access to the Klingler Cemetery.

Several areas along the streambank both above and below the bridge, including the west bank immediately under the bridge has severe erosion.

Purpose and Need for Action

The streambank has eroding soil around the bridge abutments and the eroded area is nearing the road, creating an unsafe bridge structure. The need is to have safe bridge structures for public access and administrative use. Moreover, managing erosion into surface waters of Midewin NTP would improve water quality and improve aquatic habitat. The purpose of this project is to replace an existing bridge across a tributary to Prairie Creek and stabilize up to seven (7) areas of erosion along the streambanks within a quarter mile, both upstream and downstream, of the bridge site.

Proposed Action

The action proposed by the Forest Service to meet the purpose and need, is to replace the bridge by installing a bridge that is structurally safe for the public and administrative access. The abutments to the bridge would be replaced and repositioned with the natural flow of the stream. Up to seven (7) streambank areas would be repaired by placing rip-rap in areas to prevent scour.

Decision Framework

Given the purpose and need, the deciding official will review the proposed action and the other alternative in order to decide whether to replace the bridge and/or repair the eroding areas along the Prairie Creek streambank.

[1] Scour occurs when sediment is eroded from an area in response to force by waves and currents.

Public Involvement

The proposal was listed in the Schedule of Proposed Actions (SOPA) for the Midewin National Tallgrass Prairie beginning in April 2009 and has continued to be listed in the quarterly SOPA, up to the most recent in January 2010. The proposal was also provided to a total of 151 individuals, private companies, tribal contacts, and other public agencies for comment during scoping[2], on March 6, 2009. A public notice was published in the Joliet *Daily Herald* on March 10, 2009. In addition, as part of the public involvement process, the agency consulted the United States Fish and Wildlife Service (USFWS) and Tribal Councils.

Issues

Midewin NTP received no public comments during the scoping comment period. Based on internal interdisciplinary team discussions and letters of concurrence from the USFWS and SHPO, no issues were identified. Even though no public comments were received, the Forest Service considers impacts to invasive species; threatened, endangered, and sensitive species, wildlife, heritage, air quality, soil and water resources, and recreation as integral to the analysis of this proposed project.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes and compares the alternatives considered for the Offner Bridge Replacement and Streambank stabilization project. It includes a description and map of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

Alternatives

Alternative 1

No Action

Under the No Action alternative, current management plans would continue to guide management of the project area. No bridge replacement or erosional controls would be implemented to accomplish project goals.

[2] Scoping is providing interested person an opportunity to comment on a project or proposed action.

Alternative 2

The Proposed Action

Figure 2: Exposed rebar

The existing bridge on Offner Road (Road 1 North) over an unnamed tributary to Prairie Creek (see Figure 1) would be replaced by a single-span timber bridge approximately 40 feet in length. The abutments to the new bridge would remain consistent with the existing road centerline. The abutment walls below the bridge deck would be aligned to more closely follow the natural centerline of the stream. The bridge shall have a clear roadway width of no less than 14 feet. The increase in length would allow the new concrete abutments to be constructed outside of the existing stream channel, reducing sedimentation during the phase of construction. The old abutments would then be removed and rip-rap would be placed to protect the new abutment from scour.

The streambank located immediately upstream of the west abutment would also be repaired and armored with rip-rap to prevent future erosion. The other six erosional areas would have the existing steep banks pulled back to approximately 3:1 slopes, and then they would be covered in geotextile material and planted with appropriate vegetation.

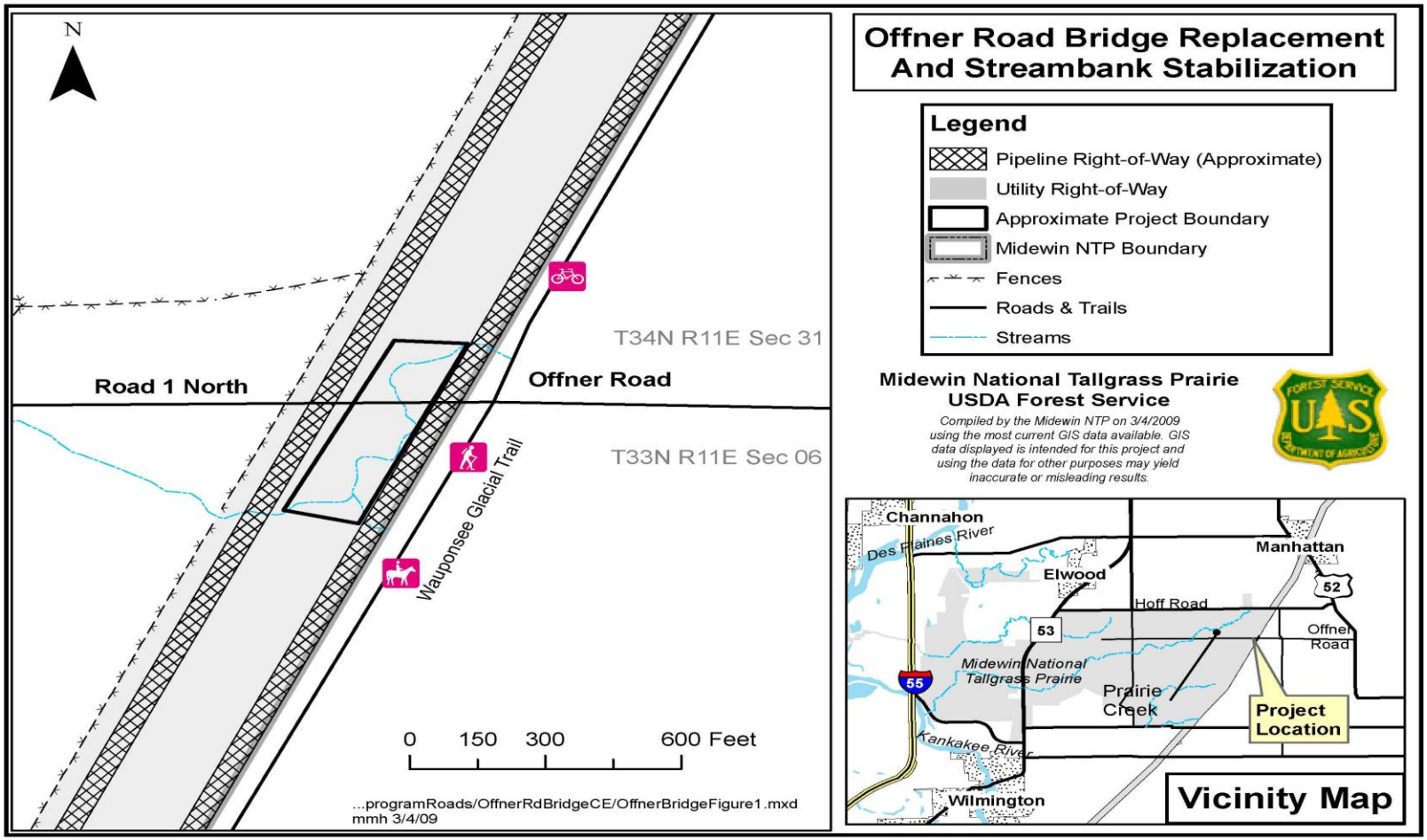

Figure 1: Offner Rd. Bridge Replacement and Streambank Stabilization map

Mitigation Common to the Action Alternative

Mitigation measures were developed to ease some of the potential impacts the action alternative may cause. The mitigation measures should be applied to alternative 2.

- If construction starts during April 15-August 15 interval, first survey the project area for nesting birds before construction begins. If any nests are found, avoid disturbance until after nestlings fledge.
- Restrict construction activities to within 200' north of Offner Road and 200' south of Offner Road. Use temporary construction fencing if necessary to prevent trespass by vehicles and equipment into grassland habitat.
- Clean equipment before arriving and after leaving Midewin.
- Use weed-free materials if possible, including soil, fill, gravel, and erosion control materials.
- Follow best management practices (BMPs) for all in-stream work and bank-stabilization, reducing sedimentation to downstream stretches of Prairie Creek.
- Stabilize channel banks with using an appropriate mixture of seed and/or plant materials. This will not only stabilize the banks, but also provide competition to exclude invasive plants. Because the Offner Bridge location is surrounded by non-native vegetation, use of certain widespread, non-native grasses (redtop, smooth brome, perennial ryegrass) is recommended. If using willows to stabilize banks, then use material (fascicles, cuttings) from the aggressive native sandbar willow, which is widespread and common on Midewin.
- Adhere to additional mitigation measure set forth by the Army Corps of Engineers 404 permit mitigation measures.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 1. Comparison of Alternatives.

Environmental Effects	**No Action (Alternative 1)**	**Replace Bridge and Stabilize Eroded Areas (Alternative 2)**
Vegetation	There are no native plant communities in the project area, vegetation will continue to consist mainly of non-native plant species.	No difference from no action alternative

Environmental Effects	No Action (Alternative 1)	Replace Bridge and Stabilize Eroded Areas (Alternative 2)
Invasive Species	Invasive plants will continue to exist in the project area, until controlled under projects.	The project and associated mitigation measures may provide minimal control for some invasive plants, but should not contribute to spread of invasive plants or create conditions for new infestations.
Wildlife	There will be no effects on wildlife species, either generalist or habitat specialist species.	Effects will be temporarily and localized and mitigation measures should prevent any adverse impacts on grassland wildlife.
TES Plant and Animal Species	No federally listed species is present in or near the project area, so there are no effects. There are no effects on Regional Forester Sensitive Species (RFSS) present around the project location.	No federally listed species is present in or near the project area, so there are no effects. Minimal impacts on nearby RFSS are further prevented by mitigation measures.
Soils	Continued erosion, which will potentially lead to the loss of the road.	Decrease soil erosion.
Water Quality	Continued sedimentation deposits into the stream.	Reduced sedimentation, stabilized streambanks and increase floodplain storage.
Air Quality	No effect	No effect
Heritage	Bridge with cultural value will remain and continue to degrade.	"Not Eligible" historic bridge will be removed.
Recreation	Continued use of bridge that doesn't meet FS standards for recreational use	Temporary trail closure. New bridge will meet current FS standards for recreational use.
Scenery	Bridge that has cultural scenic value will remain.	Concrete bridge which has cultural scenery will be removed. Streambank erosion will be returned to a more natural appearing condition.

ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

Vegetation

Affected Environment

Within a few miles of the Offner Bridge site, very little natural vegetation is present, either on Midewin or adjacent private land. Most of this landscape has been subject to continual disturbance during the last 150-200 years, primarily as the natural vegetation (mostly prairie grassland) was converted to agricultural uses. These agricultural uses (row crops, small grains, livestock grazing, hay mowing) have continued to the present day. In the last 60-70 years, agricultural activities on private land have grown more intensive compared to those on land managed by the Army, followed by the Forest Service.

Within one mile of the proposed action, there are small, degraded remnants of native prairie present along the Wauponsee Trail, a former railroad line now managed as a shared-use recreation trail by the FPDWC. These remnants presumably survived because there was still some native prairie at these sites when the railroad was built; burning and other activities used to keep the railroad right-of-way free from brush helped these remnants to survive. However, because they are isolated and occur as narrow strips of native vegetation, these prairie remnants exist in a degraded condition, often with heavy infestations of non-native plants. Recent activities by FPDWC staff (prescribed burning) has helped to improve the condition of these remnants. The nearest remnants to the Offner Road bridge lie ½ mile northeast and 1/4 mile south-southwest of the project area.

Although certain native plants are present in and around the project area, most of the landscape is dominated by non-native plants. Grasslands are dominated by Eurasian pasture grasses and forbs. Woody vegetation, as occurs along the fencelines and the Wauponsee Trail, is dominated by Amur honeysuckle, European buckthorn, autumn-olive, white mulberry, and Osage-orange, all non-native in northern Illinois. Some native trees are present (hackberry, hawthorn, black cherry, box elder, green ash, black walnut, gray dogwood) but here these species are growing in successional situations, not in native woodlands. The primary vegetation of the stream channel consists of reed canary grass, a non-native species. Although a few native plants are present along the channel (dark-green bulrush, blue vervain, sandbar willow, box elder) they do not predominate

Environmental Coonsequences

Alternative 1- No Action

There should be no adverse impacts. Access to Klinger Cemetery and adjacent areas of Midewin will still be needed; maintenance or construction of alternative route may result in greater impacts.

Alternative 2- Proposed Action

The proposed action will not impact any existing remnants of natural vegetation or any restored native habitats. Vegetation around the bridge site is highly disturbed, dominated by non-native and native plants that are tolerant of disturbance; a similar suite of plant species should regenerate after bridge replacement.

Cumulative Effects

To a great extent, native vegetation on Midewin exists as it does in the surrounding region, as small remnants immersed in a landscape dominated by agricultural or developed land. Most open lands that are not agricultural consist mostly of disturbed, successional vegetation, composed largely of non-native plants or disturbance tolerant native plants. As the landscape is further developed, the amount of open land is expected to decline, as are the amount and quality of remaining native vegetation. Exceptions to this general trend are tracts of public and private land that are protected and managed, such as Goose Lake Prairie State Natural Area. As habitat restoration proceeds, Midewin will make considerable contributions to the amount of native vegetation present in this region. The restored habitats, because of their size and diversity, are expected to increase connectivity between existing remnants and contribute to ecosystem function and maintenance of species diversity on Midewin and in the Prairie Parklands region.

This project will not adversely affect the outcome described above, because the effects are localized and will be of short nature. To the north and east, land use is now primarily agricultural; in the future most of this land will be developed to warehouses or residential use, which will have much stronger effects on native vegetation in Midewin than the replacement of the Offner Road Bridge.

Wildlife

Affected Environment

Midewin National Tallgrass Prairie supports diverse types of wildlife; among the larger and more widespread mammals and birds are white-tailed deer, coyote, raccoon, great blue heron, great-horned owl, and red-tailed hawk; these species use a diversity of habitats. Shrubby habitats support indigo bunting, catbird, northern cardinal, house wren, and cottontail rabbit. Fox squirrels, opossums, robins, grackles and eastern bluebirds prefer areas with a mixture of grassland and trees. Streams support populations of fish and aquatic invertebrates, while wetlands provide breeding and foraging habitat for muskrats, mink, aquatic birds (herons, ducks, rails), amphibians, and dragonflies. Typical grassland wildlife includes garter snake, meadow voles, deer mice, thirteen-lined ground squirrel, short-tailed shrew, eastern meadowlark, dicksissel, grasshopper sparrow, and northern leopard frog. Nearly all of Midewin that is not currently in row crops provides habitat, food and nectar sources for a large diversity of insects and other invertebrates. These invertebrates include many widespread species that are not restricted to remnant native plant communities, such as monarch butterflies, black swallowtails, bumblebees, soldier beetles, and orbweb spiders.

Some grassland wildlife, especially birds, are sensitive to habitat fragmentation and disturbance; these birds require suitable breeding habitat to be above a certain size (varies with species). Presence of certain features, such as trees, fencerows, roads, and heavily used trails can act to fragment apparently contiguous grassland below the required size. The grasslands within and immediately adjacent to the Offner Road bridge are too small and fragmented to be suitable for area-sensitive grassland wildlife.

The riparian vegetation along the tributary is too narrow to support most wetland wildlife, and the tributary itself is intermittent, unable to support permanent populations of mussels and fishes. And when water is present, the current and water level fluctuations render this stream unsuitable as a breeding area for local amphibians, which typically breed in ponds or low-gradient wetlands.

Most wildlife in the project area consists of generalist species, such as deer and coyote, or those species able to exploit edges (fox squirrel, indigo bunting, song sparrow, brown thrasher, American toad) and riparian corridors (raccoon).

Environmental Consequences

Alternative 1- No Action

There should be no adverse impacts on generalist wildlife. Access to the Klingler Cemetery and adjacent areas of Midewin will still be needed; maintenance or construction of alternative routes may result in greater impacts on wetland, grassland, or other habitat-specialized wildlife species.

Alternative 2- Proposed Action

This project will not disturb habitat or cause loss of habitat for habitat-specialist wildlife found in grasslands or wetlands. Some habitat for generalist and edge wildlife species may be disturbed by the bridge replacement. These are widespread, often common species that readily recolonize habitat once disturbance ends. Mitigation measures proposed for this project should reduce impacts on any nesting birds in the project area.

Given the small size of the proposed action, there should not be any impacts on wildlife species that are generalists, edge species, or wetland species, because they are not sensitive to edge effects or because their habitat will not be impacted. Most generalist and edge species are widespread and numerous on Midewin and public lands throughout Will County.

Cumulative Effects

Most wildlife species that are widespread and relatively common in the Prairie Parklands consists of species that are habitat generalists, edge species, disturbance tolerant, and/or adaptable to a human-dominated environment. The most tolerant species can survive in residential areas or in patches of successional vegetation amid agricultural or industrial land. Wildlife requiring more natural conditions but tolerant of edge effects thrive in forest preserves, parks, undeveloped private land, and small nature preserves. These adaptable species are expected to remain fairly widespread and numerous throughout the Prairie Parklands.

Some wildlife species are habitat specialists and intolerant of human disturbance, edge effects, or habitat degradation. These specialists are often restricted to one or a few

habitats, such as large tracts of grassland, unpolluted wetlands, or well-managed prairie remnants. These species have undergone considerable declines, and only survive at relatively few, often large sites, such as Goose Lake Prairie State Natural Area, Midewin National Tallgrass Prairie, DesPlaines State Fish and Wildlife Area, and the larger nature preserves managed by the Forest Preserve District of Will County. These species were once common, but have undergone great declines in the last two hundred years. Further declines are expected, but these declines may be offset, at least on the Prairie Parklands, by continued habitat management and restoration on Midewin and other public lands.

This project will not adversely affect the outcome described above, because the effects are localized and will be of short nature. Most surrounding land uses around this portion of Midewin are primarily agricultural; in the future, most of this land will likely be developed to warehouses or residential use, which will have much stronger effects on wildlife in Midewin than the replacement of the Offner Road Bridge.

Invasive Plants

Affected Environment

Non-native plant species are a large component of the local vegetation in northeastern Illinois and adjacent areas (approximately 35% of vascular plant species; Swink and Wilhelm 1994). Most of these non-native plants are relatively benign and occur only in seral habitats. A extensive minority of non-native plants do cause deleterious economic, ecologic, and human health effects, including reducing crop yields, requiring increased maintenance of rights-of-ways, increasing allergies, clogging waterways, changing structure in wildlife habitat, and displacing biologically diverse natural communities, such as prairies.

Many invasive plants are present in the project area, in part a consequence of nearly two centuries of disturbance by agricultural activities. Among the most common invasive plants at and adjacent to the Offner Road bridge site are autumn-olive, Amur honeysuckle, reed canary-grass, Canada thistle, poison hemlock, multiflora rose, white sweet-clover, Osage-orange, burdock, white mulberry, and wild parsnip. Additional invasive plants occur along the Wauponsee Trail, including spotted knapweed, diffuse knapweed, and teasel.

Environmental Consequences

Alternative 1- No Action

Access to Klingler Cemetery and adjacent areas of Midewin will still be needed; maintenance or construction of alternative routes may result in greater impacts.

Alternative 2- Proposed Action

Potentially, given the type of disturbance associated with this project, there is some risk of introducing invasive plants, primarily with materials and equipment brought in for this project. Also, the disturbance caused by this project may create sites that are suitable for new infestations of invasive plants. Mitigation measures should minimize this problem, preventing adverse impacts.

Cumulative Effects

Invasive plants will always be a threat to ecosystem restoration and management on Midewin. As the surrounding landscape changes, the actual plant species involved may also change, reflecting the change from a predominantly agricultural landscape to a developed landscape. Other factors, such as climate change, release of specific biological controls, and arrival of new invasive plants, will also change the number and species makeup of that group of plants considered "non-native invasives" and aggressive natives". On Midewin, as restoration proceeds and native habitats increase, many invasive plants will decline overall and/or become increasingly restricted to the edges of Midewin. Monitoring for new infestations and a rapid response to treat these infestations will contribute to this expected decline.

This project should not adversely affect the outcome described above, because the effects are localized and will be of short nature. Provided mitigation measures are followed, this project should not serve as a site for new infestations of invasive plants on Midewin.

Threatened, Endangered, and Sensitive Species

Affected Environment

There are three Federal Threatened or Endangered Species known to occur on or immediately adjacent to Midewin National Tallgrass Prairie. These three species are Leafy Prairie-clover (Endangered), Eastern Prairie Fringed Orchid (Threatened), and Whooping Crane (Endangered). In addition, Midewin has habitat for Indiana Bat (Endangered) but there are no records of this species on site. A fifth species, Mead's Milkweed (Threatened) is being propagated on Midewin in cooperation with the Chicago Field Office of the US Fish and Wildlife Service (USFWS) and The Morton Arboretum. None of these species occur in or adjacent to the Offner Bridge site or stabilization areas; suitable habitat for any of these species is not present at this location.

There are forty Regional Forester Sensitive Species (RFSS) present on Midewin. The Forest Service has established this designation (RFSS) for plant and animal species whose existence on National Forest System lands may be further jeopardized and lead to listing by the USFWS. The state of Illinois also maintains lists of Endangered and Threatened Animals and Plants (Illinois Department of Natural Resources 2005). Eighteen species on this list are known to occur on Midewin. Most of those species that are known to have permanent or breeding populations are already listed as RFSS. An additional one species not listed as RFSS is known to be present, at least on an intermittent basis. Tables 1 and 2 list the Threatened, Endangered, and Sensitive Species found on Midewin and their status at or immediately adjacent to the Offner Bridge project.

Table 1: Federally Listed Animals, Regional Forester Sensitive Animals, and State of Illinois Listed Animals present on or adjacent to Midewin National Tallgrass Prairie.

Species (Status) [3]	**Present in areas affected by proposed actions at Offner Road Bridge?**	**Expected outcome with mitigation**
Indiana Bat (FE, SE)	Habitat present	No effect
Bald Eagle (RFSS, SE)	No	No effect
Whooping Crane (FE)	No	No effect
Ellipse (RFSS)	No	No effect
Franklin's Ground Squirrel (RFSS, ST)	Nearby	No effect
Blanding's Turtle (RFSS, ST)	No	No effect
Plains Leopard Frog (RFSS)	No	No effect
Least Bittern (RFSS, SE)	No	No effect
American Bittern (RFSS, SE)	No	No effect
King Rail (RFSS, ST)	No	No effect
Upland sandpiper (RFSS, SE)	Nearby	No effect
Migrant Loggerhead Shrike (RFSS, ST)	Habitat adjacent	No effect
Bobolink (RFSS)	Nearby	No effect
Northern Harrier (RFSS, SE)	Nearby	No effect
Short-eared Owl (RFSS, SE)	Nearby	No effect
Henslow's Sparrow (RFSS, ST)	Nearby	No effect
Cerulean Warbler (RFSS)	No	No effect

[3] FE = Federal Endangered species, FT = Federal Threatened species, RFSS = Regional Forester's Sensitive Species, SE = State Endangered, ST = State Threatened

Species (Status) [3]	**Present in areas affected by proposed actions at Offner Road Bridge?**	**Expected outcome with mitigation**
Red-headed Woodpecker (RFSS)	No	No effect
Common Moorhen (ST)	No	No effect
Eryngium Stem-boring Moth (RFSS, SE)	No	No effect
Liatris Stem-boring Moth (RFSS)	No	No effect
Red-tailed Prairie Leafhopper (RFSS, ST)	No	No effect
Danella lita Mayfly (RFSS)	Downstream 10 miles	No effect
Dichagyris reliqua Moth (RFSS)	No	No effect
Macrosteles potoria Leafhopper (RFSS)	No	No effect
Oncocnemis saundersiana Moth (RFSS)	No	No effect
Plusia venusta Moth (RFSS)	No	No effect
Schinia jaguarina Moth (RFSS)	No	No effect
Spartiniphaga includens Moth (RFSS)	No	No effect
Hermit Sphinx Moth (RFSS)	No	No effect
Clemens' Sphinx Moth (RFSS)	No	No effect
Papaipema sp. #10	No	No effect

Table 2: Federally Listed Plants, Regional Forester Sensitive Plants, and State of Illinois Listed Plants present on or adjacent to Midewin National Tallgrass Prairie.

Species (Status) [4]	**Present in areas affected by proposed actions at Offner Road Bridge?**	**Expected outcome with mitigation**
Leafy Prairie Clover (FE, SE)	No	No effect
Eastern Prairie Fringed Orchid (FT, SE)	No	No effect
Mead's Milkweed (FT, SE)	No	No effect
Pitcher's Stitchwort (RFSS, ST)	No	No effect
False Mallow (RFSS, SE)	No	No effect
Glade Mallow (RFSS)	No	No effect
Limestone Quillwort (RFSS, SE)	No	No effect
Crawe's Sedge (RFSS)	No	No effect
Sullivant's Coneflower (RFSS)	No	No effect
Earleaf False-foxglove (RFSS, ST)	No	No effect
Hill's Thistle (RFSS)	No	No effect
Hairy Valerian (RFSS)	No	No effect
Goldenseal (RFSS)	No	No effect
American Ginseng (RFSS)	No	No effect
Small White Lady's Slipper (RFSS, ST)	No	No effect
Cluster Fescue Grass (RFSS)	No	No effect
Limestone Hedge Hyssop	No	No effect

[4] FE = Federal Endangered species, FT = Federal Threatened species, RFSS = Regional Forester's Sensitive Species, SE = State Endangered, ST = State Threatened

The grasslands immediately adjacent to the Offner Bridge location (within 100-200 ft) are unsuitable for any sensitive or listed grassland birds, because of fragmentation, woody encroachment, and lack of management. Within the past decade, some of these species have been present in nearby grasslands beyond the limits of this project: upland sandpiper, bobolink, Henslow's sparrow, and loggerhead shrike have been present in these grasslands during the breeding season, perhaps nesting. Short-eared owls and northern harriers use these grasslands as foraging habitat during winter and while on migration.

Franklin's Ground Squirrel is known to occur along the Wauponsee Trail approximately ¾ miles northeast of the bridge. There is likely a small population present; further surveys are needed. The bridge location is probably too rank and overgrown to provide habitat for this prairie mammal, which typically occurs in tall grasses of prairie and fields, but also along railroads and roadsides. Although tolerant of woody encroachment into grassland, the dense woody thickets along the Wauponsee Trail near the bridge are unsuitable for Franklin's ground-squirrel.

The disturbed condition of all vegetation, including the riparian area, is unsuitable for most wetland vertebrates, native plants, and prairie insects listed as RFSS or State-listed. Only one sensitive plant species, glade mallow (RFSS), is known to occur in disturbed riparian habitats, although usually along larger, permanent streams. This area was surveyed for rare plants during the summers of 2002 and 2003 as part of another project; glade mallow was not found in this area.

Prairie Creek is known to support a population of one RFSS, a mayfly (*Danella lata*), and also is potential habitat for another RFSS, the ellipse (a freshwater mussel). Habitat and known locations (for the mayfly) in Prairie Creek are nearly eleven stream miles downstream from the project location.

Environmental Consequences

Alternative 1- No Action

There should be no adverse impacts. Access to Kilingler Cemetery and adjacent areas of Midewin will still be needed; maintenance or construction of alternative routes may result in greater impacts, particularly on grassland birds.

Alternative 2- Proposed Action

No Federal listed species have been recorded on or adjacent to this project site, so no effects to these species are expected. This is concurred by a letter from the USFWS (see project file).

Several RFSS are known to reside, nest or forage in the grasslands north (>100 ft) and south (>200 ft) of the proposed project area: Franklin's ground-squirrel, bobolink, loggerhead shrike, upland sandpiper, Henslow's sparrow, short-eared owl, and northern harrier. The habitat for these animals is beyond the construction limits of the bridge location.

Aquatic species present in Prairie Creek are sufficiently downstream (>10 stream miles) to not be affected by the project, especially given the size of the area disturbed, limited time frame of construction activities, and mitigation measures.

Cumulative Effects

Nearly all threatened, endangered, and sensitive species (both animals and plants) are habitat specialists and intolerant of human disturbance, edge effects, or habitat degradation. These specialists are often restricted to one or a few habitats, such as large tracts of grassland, unpolluted wetlands, or well-managed prairie remnants. These species have undergone considerable declines, and only survive at relatively few, often large sites, such as Goose Lake Prairie State Natural Area, Midewin National Tallgrass Prairie, DesPlaines State Fish and Wildlife Area, and the larger nature preserves managed by the Forest Preserve District of Will County. Most threatened, endangered, and sensitive species have declined to a point where their future existence in the Prairie Parklands is questionable, and they require extensive management and protection to prevent further declines or even local extirpation. Current and future habitat management and restoration on Midewin and other public lands will make important contributions to the survival and recovery of these species in the Prairie Parklands.

No federally-listed plant or animal species occur in or near the Offner Road bridge project, so there will be no adverse effects on these species. Given the location, size and duration of the project, the bridge replacement should not alter the outcomes discussed in the previous paragraph for any sensitive or state-listed plant or animal species.

Soil

Affected Environment

Midewin mainly consists of fine-grained soils that hold water well and have gentle slopes. Small portions of the land have steeper slopes and/or more sandy soils with less water-holding capacity. Some land areas on Midewin have been subjected to excavation, manipulation and chemical treatments by the Army and farmers for several decades prior to Forest Service acquisition.

According to NRCS soil mapping, the project area consists of Ashkum silty clay loam with 0-2% slopes with an area of eroded Varna silt loam with 6-12% slopes to the west (NRCS 2009).

Environmental Consequences

Alternative 1- No Action

With no action, no mixing of the soil profile would occur but soil erosion would continue from the unvegetated streambank areas and become sediment within the stream. The erosional area next to the road will continue and likely make the road unusable over time.

Alternative 2- Proposed Action

There will be no adverse effect on the soil resource from the proposed project.

An estimated 708 cubic yards of roadbed material and soil material will be removed from the site to construct the new bridge. Removed soil and roadbed material will be stockpiled elsewhere on Midewin for use in later restoration activities. Similarly, an estimated 400 cubic yards of soil from streambank erosion areas will be removed to reduce bank slopes and the removed soil stockpiled for later use. Top soil will be replaced on the excavated areas where appropriate to aid growth of vegetative cover from seeds and/or plugs.

Bridge construction and bank stabilization will require Army Corps of Engineering permits before work is started. These permits detail the procedures for erosion and sediment control and inspection. Anticipated mitigation measures in the permits include, but are not limited to siltation fencing around project area, in-stream sediment barriers, isolation of in-stream bridge abutments, isolated storage of soil material, erosion control blankets, and prompt revegetation of disturbed areas. As the vegetation in the project area grows, sediment to the stream will be reduced.

Some mixing of the soil profile will occur from these actions and minor amounts may be lost in the stream during excavation in the short term. The proposed streambank stabilization will result in reduced erosion of the streambank areas over the long term and reduce the amount of soil material entering the stream as sediment through gentler slopes that are planted with native vegetation.

Cumulative Effects

The unnamed tributary was most likely dug out for water drainage in the past resulting in soil mixing and some soil loss. Upstream, farmers periodically remove vegetation from the tributary to keep water flowing freely and this practice is anticipated to continue. Less vegetation within the stream and on the streambanks upstream results in greater bank erosion and higher water velocities downstream at the project location.

The repair of the seven streambank erosional areas within the project area and bridge realignment will decrease stream channel erosion in the project area, preventing increased soil loss and the probable loss of the road. Repairing the streambanks by creating gentler slopes and planting vegetation will reduce stream velocity and bank erosion over time.

Water Quality

Affected Environment

Surface water on MNTP drains through four main streams that generally flow in a west-southwesterly direction: Jackson, Prairie, Grant, and Jordan Creeks. Water quantity in these streams varies considerably throughout the season and they may exhibit dry bed

conditions during the year. Grant Creek is the only stream listed for Illinois 303(d) impairment of aquatic life due to unknown cause(s) (Illinois EPA, 2008). Jackson and Prairie Creeks fully support aquatic life while Jordan Creek has not been assessed.

This project is located along an unnamed tributary to Prairie Creek, which has not been assessed by IEPA for impairment. This tributary flows from agricultural areas to the east on to Midewin land. Streambank erosion areas exist in SW1/4, Section 31, T34N, R11E, 3rd P.M and NW1/4, Section 6, T33N, R11E, 3rd P.M. The proposed bridge replacement is located on the section line of this area.

Environmental Consequences

Alternative 1- No Action

Streambank erosion will continue to add sediment to the stream and degrade water quality. Some streambank failure is expected during large storm events which would add bigger pulses of sediment to the stream.

Alternative 2- Replace Bridge and Stabilize eroding Areas

There will be no adverse effect on water quality from this project. Bridge construction and bank stabilization will require Army Corps of Engineering permits before work is started because the tributary is considered to be Waters of the United States. These permits detail the procedures for erosion and sediment control and inspection. Anticipated mitigation measures in the permits include, but are not limited to siltation fencing around project area, in-stream sediment barriers, isolation of in-stream bridge abutments, isolated storage of soil material, erosion control blankets, and prompt revegetation of disturbed areas. As the vegetation in the project area grows, sediment to the stream will be reduced.

No major effects on floodplains will occur from this project. Streambank stabilization and bridge replacement will occur within the 100-year floodplain of the unnamed tributary and is the responsibility of the Illinois Department of Natural Resources. The Army Corps permit process is a joint application with Illinois state agencies, so IDNR will receive the permit application and comment on the plans. Fill may be added to the existing road approach to the new bridge, but otherwise the project will not involve adding material to the floodplain.

Cumulative Effects

The unnamed tributary was most likely dug out for water drainage in the past resulting in soil mixing and some soil loss. Upstream, farmers periodically remove vegetation from the tributary to keep water flowing freely and this practice is anticipated to continue. Less vegetation within the stream and on the streambanks upstream results in greater bank erosion and higher water velocities downstream at the project location. If the streambanks are not repaired and the bridge realigned with the current stream channel, erosion in the

project area will continue adding sediment to the stream. Repairing the streambanks by creating gentler slopes and planting vegetation will reduce stream velocity and bank erosion over time resulting in less sediment input to the stream in the project area. Streambank repair will help the stream floodplain by providing areas for water to overflow its banks and spread out, instead of being confined to its existing channel.

Air

Affected Environment

The Illinois Environmental Protection Agency uses a national standard for reporting air pollution levels to the general public called the Air Quality Index (AQI) (Illinois EPA 2007). The AQI is a composite formula from six pollutant criteria and results over 100 indicate potential air quality problems. There were 6 instances of AQI from 101 to 150 in Will County in 2007 (1.6% of total time), a range that is considered unhealthy for sensitive groups such as the elderly, those with respiratory problems, and active children and adults.

The annual report from the Illinois EPA also provides estimates for stationary point emissions for 102 counties in Illinois. From this data, Will County is in the top 5 most emissions for all 5 emission categories: carbon monoxide, nitrogen oxides, particulate matter, sulfur dioxide, and volatile organic material. This data indicates that emissions from point sources in Will County contribute a major portion of total air pollution within the county.

Environmental Consequences

Alternative 1- No Action

If no action is taken, there would be no effect on air quality.

Alternative 2- Proposed Action

This project would result in no major effect on air quality. Vehicle emissions from heavy equipment used in bridge construction and streambank stabilization would contribute more emissions to the area, but during project work only and would not be a permanent increase in air pollution within the airshed. There is a potential for dust to increase during activity, but is not expected to be substantial.

Cumulative Effects

None of the alternatives would contribute to a major increase in air pollution compared to the contributions of other sources of air pollution within Will County or the Chicago Metropolitan Area.

Heritage

Affected Environment

The Offner Bridge is a historic cultural resource determined "Not Eligible" to the National Register of Historic Places. A formal concurrence for this status was provided by the Deputy Illinois state Historic Preservation Officer on 8/4/2009 (IHPA Log #001080409).

Environmental Consequences

Alternative 1- No Action

The bridge remains in situ[5]. Without regular maintenance the structural integrity of steel reinforced concrete will degrade. If extensive use continues without regular maintenance the bridge will pose a health and safety risk; eventually it will fail. Discontinued use of the bridge without restoration and regular maintenance, the bridge and its abutments will continually degrade.

Degradation of the bridge will continue if erosion continues.

Alternative 2- Replacing the Bridge and stabilizing eroded areas

The bridge has been documented as a cultural resource and determined "Not Eligible" to the National Register of Historic Places. Per Sections 2363.23 and 2363.31d of the Forest Service Manual, "if the SHPO … formally concurs that a cultural resource is not eligible for listing on the National Register [of Historic Places, NRHP), the agency official may release it from management under the NHPA [National Historic Preservation Act]." As the Offner Bridge has been determined "Not Eligible" to the NHRP, it can be released from management by the Forest Service and demolished per the requirements of the Midewin NTP.

Cumulative Effects

The Offner Bridge has been determined "Not Eligible" to the National Register of Historic Places through field investigation and in consultation with the Illinois Historic Preservation Agency and the Deputy Illinois State Historic Preservation Officer. Based on this determination, Forest Service officials may release the cultural resource from management (FSM 2636.23, 2636.31d). The salient information about Offner Bridge has been collected, preserved, and is on file with the Illinois State Historic Preservation Office and the Midewin Heritage Resource program.

[5] In situ means in its original or natural place or site.

Recreation

Affected Environment

Midewin currently has approximately 9,100 of the 18,225 acres the Forest Service manages open to the public. Three thousand five hundred of those of those are located east of Illinois Route 53, south of Hoff Road and west of Prairie Creek. This area can currently be accessed by the public from a parking lot located at the intersection of Hoff and Old Chicago Roads, from the Iron Bridge Trailhead located approximately one mile south of Hoff Road on Illinois Route 53 or via the Bailey Bridge Interim Trail that utilizes Offner Road to connect to the Wauponsee Glacial Trail. Approximately 15 miles of multiple use trail (hiking, biking and equestrian) and 2 miles of hiking only trails are available from these locations east of Illinois Route 53.

Approximately 5,600 acres are open on the west side of Illinois Route 53. This area can be accessed from one parking lot on Explosives Road off Illinois Route 53 where there are 3 miles of interim hiking only trails. Approximately two additional miles of permanent multiple use trail is located within this area and can be accessed from the east side via the Iron Bridge, which provides an overpass over the highway. Three additional parking lots access the west side of Midewin along River Road. No trails are accessible from these access points at this time. The remaining 9,000 acres of Midewin lands is closed to visitors due to army clean-up of arsenal remnants and public safety concerns associated with those activities.

Typical recreation activities at Midewin include hiking, biking, horseback riding, bird watching, and deer and turkey hunting.

The site is classified in the Prairie Plan as "Roaded Natural" in the Recreation Opportunity Spectrum. According to the Prairie Plan, Roaded Natural;

> "represents a moderate level of development and moderate to high level of social interaction within a modified physical setting that is not dominated by evidence of humans. New facilities are minimal, subtle and in harmony with the natural environment. The environment may be modified but would appear natural. Automobile and road access would be acceptable in these areas. The visitor would likely experience a moderate-high feeling of safety with relatively low opportunities for challenge."

Offner Road, the east-west road crossing the bridge is designated as the Bailey Bridge Interim Trail. The Forest Preserve of Will County's Wauponsee Glacial Trail lies approximately 60 yards to the east. The Bailey Bridge Interim Trail connects the Wauponsee Glacial Trail with Midewin's interim trail system on the east side of Midewin and approximately three miles of permanent multiple use (hiking, bicycling, and horseback riding) trail on the west side of Midewin.

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Environmental Consequences

Alternative 1 – No Action

There will be no temporary trail closure. There will also not be the opportunity to upgrade the bridge to meet Forest Service guidelines and create a safer structure for trail users.

Alternative 2 – Proposed Action

Removal of the bridge will temporarily dissect the Bailey Bridge Interim Trail limiting access between for all users including hikers, bikers and horseback riders, between Midewin and the Wauponsee Glacial trail. The primary alternative to detour users to a 3.75 mile paved section of Hoff Road between the Wauponsee Glacial Trail and the Hoff Road access point at the intersection of Hoff Road and Old Chicago Road. This alternative would be considered acceptable to bicyclists but is less than acceptable to hikers and horseback riders because of the limited width of the road with narrow shoulders. Horseback riders tend to avoid pavement due to its slippery tendencies for their horses hooves and the narrow shoulders are probably not adequate for horses or hikers over this distance. The impact of this closure would depend on the time of year that the trail is closed. A fall or spring closure would cause the largest impact while a winter closure would cause little impact.

Beyond the temporary closure, replacement of the bridge will create a more safe condition for all users if bridge rails are designed appropriately for all expected recreation users. Forest Service guidelines state that 54 inch high rails should be utilized for trails that accommodate bicyclists and horseback riders. Bridge rails for pedestrians should be designed so that a 4" sphere can not pass through any portion the railing and the railing shall not create a "ladder" for climbing. If these design guidelines are followed the new bridge will be much safer than the existing condition.

Cumulative Effects

The Prairie Plan does not utilize this road for future public access. When the Midewin's permanent trail system is more fully developed, it is likely that Offner Road will no longer be used as a trail. At that time, safety concerns regarding the bridge will be nullified. There is no projected time frame when this will happen.

Scenery

Affected Environment

The surrounding landscape is gently rolling terrain with pasture grasses as the dominant vegetation. The stream the bridge crosses is a meandering stream with eroding banks along much of this segment of stream. A utility corridor running in a Northernly-Southernly direction is designated by the Prairie Plan through the area. Several

subsurface gas and oil lines and an overhead high voltage transmission line and follow this corridor. Overhead transmission line towers lie approximately .05 miles south of the site and .15 miles north of the site.

The site is classified to have a Scenic Integrity Objective of 'High". This is due primarily to the proximity of the site to the Wauponsee Glacial Trail. The Prairie Plan guidelines (Prairie Plan, page 4-11) states that this area;

> "High Scenic Integrity: Appears unaltered. Valued landscape character appears intact. Deviations may be present, but are not evident because they so completely repeat the lines, forms, colors, textures and patterns, at the appropriate scale, of the characteristic landscape."

Environmental Consequences

Alternative 1 – No Action

Restoration of the stream banks will not occur. The streambanks will remain in the eroding condition which currently exists. The bridge that has scenic value will remain.

Alternative 2 – Proposed Action

The propose action will stabilize the streambanks adjacent to the bridge, returning them to a more natural appearing condition, thus moving them toward the Scenic Integrity level of high. The proposed action will also remove the "Not Eligible" historic concrete bridge which has value in the cultural scenery.

Cumulative Effects

There are no cumulative effects resulting from either the no action or the propose action alternatives.

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

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FEDERAL, STATE, AND LOCAL AGENCIES:

US Fish and Wildlife Service

Illinois State Historic Preservation Office

US Army Corps of Engineer

TRIBES:

Citizen Potawatomi Nation

Forest County Potawatomi Community

Hannahville Indian Community

Prairie Band Potawatomi Nation

Kickapoo of Kansas tribal Council

Kickapoo Tribe of Oklahoma